

REMARKS

Claims 1-3 and 5-23 are pending in the present application. In the Office Action mailed April 18, 2007, the Examiner rejected claims 1-3, 17-19, and 22 under 35 U.S.C. §102(b) as being anticipated by Yonekawa (US Pub. 2004/0094732). The Examiner next rejected claims 8-10 and 16 under 35 U.S.C. §103(a) as being unpatentable over Watanabe et al. (US Pub. 2002/0181659). Claims 5, 6, and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yonekawa, as applied to claims 1 and 17, and further in view of Karellas (US Pub. 2002/0070365). Claims 7 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yonekawa, as applied to claims 1 and 17, and further in view of Watanabe et al. Claims 11, 12, 14, and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Watanabe et al., as applied to claim 8, and further in view of Yonekawa. Claim 13 was rejected under 35 U.S.C. §103(a) as being unpatentable over Watanabe et al., as applied to claim 12, and further in view of Jeromin et al. (USP 5,661,309). Claim 23 was rejected under 35 U.S.C. §103(a) as being unpatentable over Yonekawa, as applied to claim 17, and further in view of Kajiwara et al. (USP 6,667,480).

The Examiner rejected claim 1 under 102(b) as being anticipated by Yonekawa, stating that Yonekawa discloses “a radiographic detector panel support (1) comprising: a body (10) (20) composed of a composite material (i.e. aluminum, carbon fiber reinforced plastic or the like) ([0048]) . . . [and] radiation absorbing material (25) (i.e. lead sheet) ([0051]).” *Office Action*, 04/18/07, pg. 2. Applicant respectfully disagrees. Specifically, Applicant believes that Yonekawa fails to teach or disclose a body composed of a composite material sufficient to structurally support components of a radiographic detector, wherein the body has radiation absorbing material interspersed therein as is called for in claim 1.

Yonekawa is directed to a radiographic image reading apparatus for reading radiographic image information stored in a storage phosphor sheet. *Yonekawa* at ¶2. Yonekawa discloses a cassette 1 composed of a frame 11, within which a radiation absorbing sheet 25, a support plate 27 and a storage phosphor sheet 28 are disposed. *Id.* at ¶45-6; ¶50. Yonekawa further discloses that the radiation absorbing sheet 25 is, for example, a lead sheet and the support plate 27 is “a light resin plate” or “a light metal plate.” *Id.* at ¶51 and ¶54.

Yonekawa, however, fails to teach or disclose a body composed of a composite material sufficient to structurally support components of a radiographic detector with a radiation absorbing material interspersed within the body as is called for in claim 1. That is, claim 1 is directed to a body of a radiographic detector panel that is constructed of at least two (2) materials: a composite

material and a radiation absorbing material that is interspersed within the body of the radiographic detector panel.

While Yonekawa may disclose a radiation absorbing sheet 25 that is, for example, a lead sheet and a support plate 27 that is a light resin plate or a light metal plate, Yonekawa does not disclose a radiographic detector panel body constructed of at least a composite material and a radiation absorbing material where the radiation absorbing material is interspersed within the composite material body. At most, Yonekawa discloses a metallic radiation absorbing sheet 25 disposed atop a resin or metal support plate 27. As such, Yonekawa does not teach or disclose interspersing a radiation absorbing material within a composite material as called for in claim 1. For all these reasons, Applicant believes that claim 1, and the claims dependent therefrom, are patentably distinct over Yonekawa.

The Examiner also rejected claim 17 under 35 U.S.C. § 102(b) as being anticipated by Yonekawa. Claim 17 calls for, in part, a method of manufacturing a flat panel x-ray detector including the step of providing a bulk of non-x-ray absorbing material and incorporating x-ray absorbing material into the bulk. Applicant believes that Yonekawa fails to teach or disclose an x-ray detector that includes a bulk of non-x-ray absorbing material having x-ray absorbing material incorporated into the bulk as claimed.

As set forth above with respect to claim 1, Yonekawa discloses a support plate 27 bonded to a radiation absorbing sheet 25. *See Yonekawa* at ¶51. Support plate 27 is described as “a light resin plate... such as a glass epoxy resin plate, a paper phenol resin plate and the like.” *Id.* at ¶54. Yonekawa also discloses that the support plate 27 may be a light metal plate made of aluminum or magnesium alloy. *Id.* However, while Yonekawa may disclose forming an x-ray detector panel support constructed of a resin or a metal, Yonekawa does not disclose forming an x-ray detector panel support having both non-x-ray and x-ray absorbing materials where x-ray absorbing material is incorporated into a bulk of non-x-ray absorbing material as is called for in claim 17. That is, Yonekawa merely discloses a radiation absorbing sheet 25 disposed atop a resin or metal support plate 27. Thus sheet 25 is not “incorporated into” metal support plate 27, and Yonekawa does not teach or disclose forming an x-ray detector panel support having both non-x-ray and x-ray absorbing materials where x-ray absorbing material is incorporated into a bulk of non-x-ray absorbing material as is called for in claim 17. Claim 17, and the claims dependent therefrom, are thus believed to be patentably distinct over the cited reference.

The Examiner also rejected claims 18 and 19, which depend from claim 17, under 35 U.S.C. § 102(b) as being anticipated by Yonekawa. Both claim 18 and claim 19 call for the use

of a plurality of non-x-ray absorbing material layers in the manufacture of a flat panel x-ray detector. Additionally, claim 18 calls for a non-x-ray absorbing material is secured to a first layer and a second layer of non-x-ray absorbing material.

In rejecting the claims, the Examiner did not refer to any specific section of the cited reference or the rejected claim in support of the rejection and gave no indication as to where such a configuration is taught or disclosed in Yonekawa. As set forth above, Yonekawa does not teach or suggest such a first and second layer of non-x-ray absorbing material to which an x-ray absorbing material is secured. Rather, as explained with respect to claim 17, Yonekawa (at best) discloses a radiation absorbing sheet 25 disposed atop a support plate 27. As such, claims 18 and 19, in addition to being patentably distinct pursuant to their chain of dependency, are also distinct for the reasons set forth above.

The Examiner rejected claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Watanabe et al. The Examiner stated, in part, that Watanabe discloses “a panel support (43) disposed between detector array and control board (See Fig. 4), the panel support at least partially formed of radiation absorbing material (i.e., metal compound) ([0044]).” *Office Action*, supra at 3. Initially, Applicant is confused as to the basis for the rejection and whether claim 8 is being rejected as being anticipated by Watanabe et al. under §102(b) or as being obvious over Watanabe et al. under §103(a). While the Examiner’s rejection of claim 8 falls within the “Claim Rejections - 35 USC § 102” section, the Examiner stated that “Claims 8-10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al.” *Id.* at pg. 2. If the Examiner intends to reject claim 8 under §103(a), Applicant believes the Examiner has not satisfied the burden of producing a prima facie case of obviousness. Thus, Applicant requests clarification as to the grounds of the rejection. Regardless of this, Applicant respectfully disagrees with the rejection, as the cited reference fails to teach, disclose, or suggest all the elements of claim 8. Specifically, Applicant believes that Watanabe et al. fails to teach or disclose a panel support at least partially formed of radiation absorbing material as is called for in claim 8.

Watanabe et al. discloses an X-ray imaging apparatus formed as an electronic cassette 11. *See Watanabe et al.* at ¶40. The electronic cassette 11 includes a first housing 21 in which an X-ray detection panel 44 is placed, the panel 44 including a fluorescent plate 41, a photoelectric conversion element 42, and a board (substrate) 43 (e.g. a glass plate) on which the photoelectric conversion element 42 is formed and to which fluorescent plate 41 is bonded. *Id.*; *see also* Fig. 4. The X-ray detection panel 44 is placed on a metal base 45, which separates the detector from a circuit board 47 and provides support in the electronic cassette 11. *Id.* Watanabe et al., however,

does not teach or disclose that either board 43 or panel 45 is at least partially formed of radiation absorbing material as is called for in claim 8. That is, contrary to the Examiner's assertion that the board 43 in Watanabe et al. is "at least partially formed of radiation absorbing material," there is simply no teaching or suggestion in the cited reference that board 43 or panel 45 is at least partially formed of radiation absorbing material. In fact, as stated above, Watanabe et al. discloses that board (substrate) 43 is often formed as a glass plate "because it is necessary that there is no chemical reaction with semiconductor elements, that it be able to withstand the temperature of semiconductor processes, and that it have dimensional stability." *Watanabe et al.* at ¶44. Watanabe et al., therefore, clearly does not teach or disclose a panel support at least partially formed of radiation absorbing material as is called for in claim 8. Claim 8, and the claims dependent therefrom, are thus patentably distinct over the cited reference.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-3 and 5-23.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

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Dated: July 18, 2007
Attorney Docket No.: GEMS8081.235

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General Authorization and Extension of Time

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 07-0845. Should no proper payment be enclosed herewith, as by credit card authorization being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 07-0845. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extensions under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 07-0845. Please consider this a general authorization to charge any fee that is due in this case, if not otherwise timely paid, to Deposit Account No. 07-0845.

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